**Osmoregulation**

Osmoregulation is the regulation of water concentrations in the bloodstream, effectively controlling the amount of water available for cells to absorb.

The homeostatic control of water is as follows

* A change in water concentration leads to active via negative feedback control
* Osmoreceptors that are capable of detecting water concentration are situated on the hypothalamus next to the circulatory system
* The hypothalamus sends chemical messages to the pituitary gland next to it.
* The pituitary gland secretes anti-diuretic hormone (ADH), which targets the kidney responsible for maintaining water levels.
* When the hormone reaches its target tissue, it alters the tubules of the kidney to become more / less permeable to water
* If more water is required in the blood stream, high concentrations of ADH make the tubules more permeable.
* If less water is required in the blood stream, low concentrations of ADH make the tubules less permeable.
* This is illustrated by the flow chart below

